REMARKS

Claims 26-50 are pending in this application. Claims 1-25 have been canceled without prejudice. Claims 26, 34, 39, 44, 47 and 49 have been amended. Applicants reserve the right to pursue the original claims and other claims in this application and in other applications. A petition for an extension of time is being filed concurrently herewith.

Claims 44 and 47-50 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Reconsideration is respectfully requested. The claims have been amended to overcome the concerns raised in the Office Action. Dependent claim 44 has been amended to recite that the rotatable valve handle is "connected to said piston unit." Claims 47 and 49 have been rewritten in independent form to include all limitations of independent claim 39. Claims 47 and 49 have been also amended to recite the step of causing oxygen and nitrous oxide "at said second flow rate" to flow "through a pressure regulator and then to an operative device." The claims, as amended, are believed to be in full compliance with 35 U.S.C. § 112.

Claims 26-46 are rejected under 35 U.S.C. § 103 as being unpatentable over Klinger-Lohr et al. (U.S. Patent No. 3,211,419) ("Klinger-Lohr") or Brumm (U.S. Patent No. 3,624,753). Reconsideration is respectfully requested.

The claimed invention relates to a device for handling pressurized gas and a method of operating a surge-prevention valve. As such, amended independent claim 26 recites a "device for handling pressurized gas" comprising *inter alia* "first and second valves" located within a housing and "an actuator arranged to initially open said first valve for flowing gas in a first direction . . . and to subsequently open said second valve for flowing gas in an axial direction . . . said axial direction being the same as said first direction."

Amended independent claim 34 recites a surge prevention dual-path valve for pressurized oxygen comprising *inter alia* "a housing having an inlet connected to a surge of high pressure oxygen" and "a first valve located within said housing, said first valve

comprising an upper seat in communication with an upper portion of a pressurization orifice" and "a second valve . . . comprising a lower seat in communication with a lower portion of said pressurization orifice." Amended independent claim 34 also recites "a piston unit arranged to initially move said upper seat in a first direction to open said pressurization orifice, and to subsequently move said lower seat in an axial direction to open said flow path, said axial direction being the same as said first direction."

Amended independent claim 39 recites a method of operating a surge prevention dual-path valve by "moving at least a portion of a piston unit in an axial direction for about 0.25 to about 1.5 seconds to cause gas to flow through a pressurization orifice" and "subsequently moving said piston unit in said axial direction to cause gas to flow through a second valve."

Klinger-Lohr relates to a "shut-off valve" with a sealing element "adapted to provide a fluid-tight seal" between a piston-like head and a restricting portion of a valve housing. (Col. 1, lines 9-18). Klinger-Lohr teaches that the sealing element "is invariably compressed at least when the valve member is in sealing position and properly seals the valve member against the housing even if it should wear away by friction and should become corroded or would shrink under the action of conveyed fluids." (Col. 1, lines 58-66).

Brumm relates to a "two-stage opening globe valve." According to Brumm, "[C]oaxial and lateral primer ducts connect the chamber to the upstream and downstream flow passages." (Abstract). Thus, after the primer valve 76 closes and shuts off an outlet primer duct 91 "opening into the downstream flow passage (16)," the primer valve 76 "will engage and open the main valve plug 76 for full capacity upstream flow." (Col. 2, lines 53-57; Col. 3, lines 2-3).

The subject matter of claims 26-46 would not have been obvious over Klinger-Lohr or Brumm. Indeed, the Office Action fails to establish a *prima facie* case of obviousness. Courts have generally recognized that a showing of a *prima facie* case of

obviousness necessitates three requirements: (i) some suggestion or motivation, either in the references themselves or in the knowledge of a person of ordinary skill in the art, to modify the reference or combine the reference teachings; (ii) a reasonable expectation of success; and (iii) the prior art references must teach or suggest all claim limitations. See e.g., In re Dembiczak, 175 F.3d 994, 50 U.S.P.Q.2d 1614 (Fed. Cir. 1999); In re Rouffet, 149 F.3d 1350, 1355, 47 U.S.P.Q.2d 1453, 1456 (Fed. Cir. 1998); Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 U.S.P.Q.2d 1626, 1630 (Fed. Cir. 1996).

In the present case, Klinger-Lohr and Brumm fail to teach or suggest all limitations of amended independent claims 26, 34 and 39. Klinger-Lohr does not teach or suggest a "device for handling *pressurized gas*" (claim 26), or a "surge prevention dual-path valve for *pressurized oxygen*" comprising *inter alia* "a housing having an inlet connected to a surge of *high pressure oxygen*" (claim 34) or a "method of operating a surge prevention dual-path valve by "moving at least a portion of a piston unit in an axial direction for about 0.25 to about 1.5 seconds to cause *gas* to flow through a pressurization orifice of a first valve at a first flow rate" (claim 39) (emphasis added). As noted above, Klinger-Lohr relates to a "shut-off valve" with a sealing element "adapted to provide a fluid-tight seal" between a piston-like head and a restricting portion of a valve housing, and not to a device and method for handling pressurized gas, such as pressurized oxygen or nitrous oxide, as in the claimed invention. In fact, the crux of Klinger-Lohr is eliminating the "physical and/or chemical action of the fluids caus[ing] a more rapid loosening of the sealing element" (col. 1, lines 28-31), and not a surge prevention valve for pressurized gas, as in the claimed invention.

Brumm does not teach or suggest first and second valves for flowing gas in a first direction at a first flow rate, and in an axial direction at a second flow rate, wherein "said axial direction being the same as said first direction," as amended independent claims 26 and 34 recite. Brumm also fails to teach or suggest a method of operating a surge prevention dual-path valve by "moving at least a portion of a piston unit in an axial

direction for about 0.25 to about 1.5 seconds to cause gas to flow through a pressurization orifice of a first valve at a first flow rate," as amended independent claim 39 recites. For at least these reasons, the Office Action fails to establish a *prima facie* case of obviousness and withdrawal of the rejection of claims 26-46 is respectfully requested.

Claims 26-27 and 32-46 are rejected under 35 U.S.C. § 103 as being unpatentable over Cranage et al. (U.S. Patent No. 3,347,270) ("Cranage"). Reconsideration is respectfully requested.

Cranage relates to a pressure equalizing flow control valve that can be connected to an oxygen tank in a welding assembly for industrial use. According to Cranage, a pilot valve element 46 is "adapted to engage the pilot valve seat 43 and close the pilot valve passage 44." (Col. 3, lines 70-73; Figure 1).

The subject matter of claims 26-27 and 32-46, as amended, would not have been obvious over Cranage. Cranage does not teach or suggest "an actuator arranged to initially open said first valve for flowing gas in a first direction at a first flow rate through a pressurization orifice" (claim 26), or a "surge prevention dual-path valve for pressurized oxygen" comprising *inter alia* "a housing having an inlet connected to a surge of high pressure oxygen" and upper and lower seats "in communication with an upper portion of a pressurization orifice" (claim 34). Cranage also fails to teach or suggest a method of operating a surge prevention dual-path valve by "moving at least a portion of a piston unit in an axial direction for about 0.25 to about 1.5 seconds to cause gas to flow through a pressurization orifice of a first valve at a first flow rate," as amended independent claim 39 recites (emphasis added). Cranage teaches a valve for an oxygen welding tank. Cranage uses a single seat 43 that corresponds to a big valve and can easily deform over time and affect the gas pressurization. In addition, the first passageway of Cranage is not controlled for time delay, much less for about 0.25 to about 1.5 seconds, as in the claimed invention. For at least these reasons, withdrawal of the rejection of claims 26-27 and 32-46 is respectfully requested.

Claims 26, 31-33 and 39 are rejected under 35 U.S.C. § 103 as being unpatentable over Martin (U.S. Patent No. 1,833,653). Reconsideration is respectfully requested.

Martin relates to a valve apparatus for a water spigot. The apparatus has a rotatable main valve 5 and a co-axial push-button valve 14. The main valve 5 is rotated by turning (rotating) a handle 22, but to permit flow of water "for only a short period of time," the coaxial valve 14 is operated by pressing downward on the handle 22 (page 1, lines 86-94).

In the present case, Martin fails to teach or suggest all limitations of amended independent claims 26 and 39. Martin does not teach or suggest a "device for handling *pressurized gas,*" as amended independent claim 26 recites, or a "method of operating a surge prevention dual-path valve by "moving at least a portion of a piston unit in an axial direction for about 0.25 to about 1.5 seconds to cause *gas* to flow through a pressurization orifice of a first valve at a first flow rate," as amended independent claim 39 recites (emphasis added). Martin teaches a water valve 14 which is operated by "pressing down on the handle 22" (col. 2, lines 88-89) and does not require a precise control of an initial flow of pressurized gas, as in the claimed invention.

In addition, one skilled in the art would not have been motivated to employ the water valve of Martin "to regulate any type of flow in various types of environments," as the Office Action asserts. As noted above, valve 14 of Martin is a water valve designed for water pressure systems which, as known in the art, are at about 90 psi. Accordingly, the Office Action fails to establish a *prima facie* case of obviousness, and withdrawal of the rejection of claims 26, 31-33 and 39 is respectfully requested.

Applicants reserve the right to pursue the original claims and other claims in this application and in other applications. The canceled and/or amended claims have been canceled and/or amended solely for the purpose of furthering the prosecution of the present application. Applicants reserve the right to claim the subject matter of the canceled claims, the claims pending prior to this Amendment, and/or the subject matter of other

claims embodied in this application, or any continuation, division, CPA, subsequent reissue, reexamination or other application. Any amendments made to the application are not made for the purpose of distinguishing the claims over prior art except as specifically discussed in the Remarks section of this paper. Applicants may file a continuing application with claims that do not contain the limitations discussed in this paper, and Applicants expressly reserve the right to do so.

A marked-up version of the changes made to the claims by the current amendment is attached. The attached page is captioned "**Version with markings to show changes made.**"

Allowance of the application with claims 26-50 is solicited.

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Version With Markings to Show Changes Made

26. (Amended) A device for handling pressurized gas, said device comprising:

a housing having an inlet, an outlet, and a flow path from said inlet to said outlet;

first and second valves located within said housing; and

an actuator arranged to initially open said first valve for flowing gas in a first direction at a first flow rate through a pressurization orifice, and to subsequently open said second valve for flowing gas in an axial direction at a second flow rate through said device, said second flow rate being greater than said first flow rate, said axial direction being the same as said first direction.

34. (Amended) A surge prevention dual-path valve for pressurized oxygen comprising:

a housing having an inlet connected to a surge of high pressure oxygen, an outlet, and a flow path from said inlet to said outlet;

a first valve located within said housing, said first valve comprising an upper seat in communication with an upper portion of a pressurization orifice;

a second valve located within said housing, said second valve comprising a lower seat in communication with a lower portion of said pressurization orifice; and

a piston unit arranged to initially move said upper seat in [an axial] a first direction to open said pressurization orifice, and to subsequently move said lower seat in [said] an axial direction to open said flow path, said axial direction being the same as said first direction.

39. (Amended) A method of operating a surge prevention dual-path valve, said method comprising the steps of:

moving at least a portion of a piston unit in an axial direction for about 0.25 to about 1.5 seconds to cause gas to flow through a pressurization orifice of a first valve at a first flow rate; and

subsequently moving said piston unit in said axial direction to cause gas to flow through a second valve at a second flow rate, said second flow rate being greater than said first flow rate.

44. (Amended) The method of claim 43, wherein an operator removes his or her hand from a rotatable valve handle connected to said piston unit and re-grips said handle after said gas flows through said first valve and before said gas flows through said second valve.

47. (Amended) [The method of claim 39, further comprising the step of]

A method of operating a surge prevention dual-path valve, said method comprising the steps of:

moving at least a portion of a piston unit in an axial direction to cause oxygen to flow through a pressurization orifice of a first valve at a first flow rate;

subsequently moving said piston unit in said axial direction to cause oxygen to flow through a second valve at a second flow rate, said second flow rate being greater than said first flow rate; and

causing oxygen to flow through said dual-path valve at said second flow rate, through a pressure regulator and then to an operative device.

49. (Amended) [The method of claim 39, further comprising the step of]

A method of operating a surge prevention dual-path valve, said method comprising the steps of:

moving at least a portion of a piston unit in an axial direction to cause nitrous oxide to flow through a pressurization orifice of a first valve at a first flow rate;

subsequently moving said piston unit in said axial direction to cause nitrous oxide to flow through a second valve at a second flow rate, said second flow rate being greater than said first flow rate; and

causing nitrous oxide to flow through said dual-path valve at said second flow rate, through a pressure regulator and then to an operative device.